UNITED STATES PATENT AND TRADEMARK OFFICE

Appl./ Serial No.:	10/766,630	Confirmation No. 3745
Application of:	Shinpei Namiki et al.	
Filed:	January 27, 2004	
TC/AU.:	3683	
Examiner:	Robert Siconolfi	
Docket No.:	972.1095	
For:	**LINEAR DAMPER**	

AMENDMENT AFTER FINAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

June 22, 2006, 2006

Sir:

In response to the Office Action dated March 22, 2006 entry and consideration of the following amendments and remarks is respectfully requested.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 5 of this paper.

I hereby certify that this correspondence and/or fee is being submitted to the United States Patent & Trademark Office via the Electronic Business Center on June 22, 2006.

Wolf, Block, Schorr & Solis-Cohen LLP
BY: _____

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A linear damper, comprising:

a casing;

a slider inserted into the casing and moving relatively to the casing, and having a working portion;

a damping groove provided in one of the casing and the slider, and having tapering faces formed on the side faces of the damping groove and inclined to taper an inner width of the damping groove in one of a depth direction and an opening direction, and having a ceiling face;

a damping portion provided in the other of the casing and the slider to be fitted in the damping groove with allowance for a sliding movement, and having tapering faces facing the tapering faces of the damping groove;

a space provided between the ceiling face of the damping groove and the damping portion;

a conversion mechanism for producing a force pressing the damping portion in a direction tapering the inner width of the damping groove when a force is applied to the working portion to move the slider in the axis direction; and

wherein said damper portion is structured and arranged to be engaged in said damping groove when said damping portion is pressed in a direction of the tapering inner width of said damping groove to provide a wedge effect.

2. (Original) A linear damper according to claim 1,

wherein the slider includes a first moving member provided with the working portion, and a second moving member formed independently of the first moving member and provided with one of the damping groove and the damping portion; and

wherein the conversion mechanism moves the second moving member in conjunction with a movement of the first moving member in the axis direction, to produce the force pressing the damping portion in the direction tapering the inner width of the damping groove.

3. (Original) A linear damper according to claim 2,

wherein the second moving member is provided movably in the depth direction of the damping groove; and

wherein the conversion mechanism includes inclined faces provided in one of the first and second moving members, and contact portions provided in the other moving member to come into contact with the individual inclined faces, and exerts a moving force of the first moving member on the second moving member via the inclined faces, so that when the moving force of the first moving member is exerted on the second moving member, the second moving member is moved in the depth direction of the damping groove to press the damping portion in the direction tapering the inner width of the damping groove.

4. (Withdrawn) A linear damper according to claim 2, further comprising:

in addition to the conversion mechanism, a release mechanism provided for removing the force pressing the damping portion in the direction tapering the inner width of the damping groove, and including inclined faces provided in at least one of the first and second moving members, and contact portions provided in the other moving member to come into contact with the individual inclined faces,

wherein the inclined face of the release mechanism is inclined in the same direction as that of the inclined face of the conversion mechanism.

5. (Withdrawn) A linear damper according to claim 4,

wherein when the first moving member is moved in one of forward and backward directions of the axis of the first moving member, the conversion mechanism moves the second moving member in the depth direction of the damping groove to produce the force pressing the damping portion in the direction tapering the inner width of the damping groove, and when the first moving member is moved in the other direction of the forward and backward directions of the axis, the release mechanism removes the force pressing the damping portion in the direction tapering the inner width of the damping groove,

further comprising a spring for exerting a spring force in a direction removing the pressing force on the first moving member.

6. (Withdrawn) A linear damper according to any one of claims 2,

wherein the second moving members are provided in plural around the first moving member,

wherein the inclined face is provided in one of the first and second moving member, and the contact portion is provided in the other moving member to come into contact with the inclined face, the inclined face provided in one of the first and second moving members and the contact portion provided in the other moving member facing each other.

7. (Withdrawn) A linear damper according to claim 1, wherein the slider is integrally formed by combining the working portion and one of the damping portion and the damping

groove, and the axis of the working portion is eccentric to the axis of the one of the damping portion and the damping groove.

8. (Withdrawn) A linear damper according to claim 7, wherein the damping groove provided in the casing is shaped in form of a dovetail groove, and the damping portion provided in the slider is fitted into the dovetail groove with allowance for a sliding movement.

9. (Withdrawn) A linear damper according to claim 8, wherein the working portion of the slider has a shaft portion, and the casing has a shaft hole through which the shaft portion passes, and a clearance for allowing the shaft portion to move in a direction opposite to the damping portion.

10. (Withdrawn) A linear damper according to claim 8, wherein when the slider is moved one of forward and backward directions of the axis of the slider, the conversion mechanism exerts the force pressing the damping portion in the direction tapering the inner width of the damping groove,

further comprising a spring provided for exerting a spring force in a direction returning the damping portion to a normal position on the damping portion.

REMARKS

This Response is in reply to the Office Action mailed on March 22, 2006. Claims 1-3 are pending and claim 1 has been amended herein. No new matter has been added. Entry and consideration of the amendments and following remarks is respectfully requested.

REJECTION UNDER 35 U.S.C. § 103(a)

Claims 1-3 stand rejected as obvious over U.S. Pat. App. No. 2002/0185348 to Flower et al. (hereinafter "Flower") in view of U.S. Pat. No. 4,442,870 to Jankovsky. This rejection is respectfully traversed.

Examiner cited Jankovsky as teaching a tapered damping groove, especially Fig. 6 of the Jankovsky patent. The Jankovsky patent teaches increasing friction between the break shoes (25 and 26) and the receiving member (20) by beveling the break shoes and the receiving member to increase the contact surface between the components. In this manner, as the receiving member slides along the break shoes, friction provides the necessary resistance. The purpose of Jankovsky is to provide a larger heat removal surface. This is achieved by Jankovsky by increasing the contact surface whereby heat from the friction is distributed and may be liberated more rapidly.

In contradistinction, the present invention does not rely on increasing the contact surface between the damping groove and the and the damper portion. The claimed invention achieves a damping force through a wedge effect. The wedge is formed between the damper portion and the ceiling face of the damping groove. As the slider moves in the axis direction within the damping groove, the conversion mechanism forces the damping portion against the ceiling face of the damping groove eliminating the space between them. In other words, the damping portion

is forced to engage the damping groove which produces more of a "bite" and an increased damping force. The friction is increased as a result of forcing the damping portion against the damping groove in an axis perpendicular to the axis of the damping groove. The invention does not rely on the contact friction caused by the two components merely sliding against each other, as relied upon by Jankovsky.

Claim 1 was amended herein to more clearly illustrate that the damper portion is being forced against the damper groove into the space that existed between the damper portion and the damper groove. Please note that this feature is not shown by Fig. 6 of Jankovsky. Although there appears to be a space between the brake shoe and the receiving member, the application is clear that the components are shown in a separated position for the sake of clarity only (Col. 3, lines 24-25). In use, Jankovsky would appear as Attachment A, enclosed herewith. This feature is also not taught by Flower.

The cited references also fail to disclose the limitation that the damper portion is structured and arranged to be engaged in the damping groove when the *damping portion is pressed in a direction of the tapering inner width of said damping groove to provide a wedge effect*. No wedge effect is shown in either reference between the damping portion and the damping groove.

Accordingly, for at least the reasons discussed above, claim1 is patentable over the cited references. By reason of their dependence, directly and indirectly, from claim 1, claims 2 and 3 are also patentable. It is respectfully requested that the Examiner withdraw the rejection.

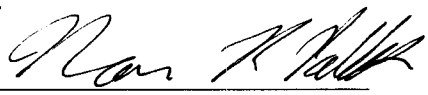
CONCLUSION

In view of the amendments to claim 1 made herein and the arguments presented above, it is submitted that the Examiner's rejections have been overcome and should be withdrawn. The application should now be in condition for allowance.

Should any changes to the claims and/or specification be deemed necessary to place the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned to discuss the same.

This Response is being timely filed with a Request for Continued Examination and the appropriate fee. In the event that any other extensions and/or fees are required for the entry of this Amendment, the Patent and Trademark Office is specifically authorized to charge such fee to Deposit Account No. 23-2820 in the name of Wolf, Block, Schorr & Solis-Cohen LLP. An early and favorable action on the merits is earnestly solicited.

Respectfully submitted,
WOLF, BLOCK, SCHORR & SOLIS-COHEN LLP.

By: 
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Attachment A